

DRAFT

Redwood Creek Watershed Synthesis Report



The mission of the North Coast Watershed Assessment Program is to conserve and improve California's north coast anadromous salmonid populations by conducting, in cooperation with public and private landowners, systematic multi-scale assessments of watershed conditions to determine factors affecting salmonid production and recommend measures for watershed improvements.

NCWAP General Findings and Discussion

Redwood Creek Basin Issue and Recommendations Synthesis

While a number of impairments to salmonid habitat exist in the Redwood Creek watershed, recent studies have shown that parts of the upper one third of watershed is producing significant quantities of juvenile chinook salmon. Identified impairments include high instream sediment levels, stream channel aggradation and widening (level of the streambed rises and widens due to deposition of sediment and eroding streambanks), lack of stream habitat structure such as deep pools, stream water temperatures that are too high to support salmon, loss of functioning estuary habitat due to levee construction and excessive sediment accumulations. Human activities—such as road construction, grazing of livestock, timber management, and levee construction—have interacted with natural geologic instability and sediment production, and major rainstorm events (e.g., the 1964 flood) to contribute to these salmon habitat impacts. Limited water column chemistry monitoring in Redwood Creek generally indicates no problems with nutrients, dissolved oxygen, phosphorous, and nitrogen.

Watershed problem sources on the Redwood Creek watershed are located more on the middle and upper portions of the watershed, where steeper slopes, higher geologic instability, higher road densities, and more intensive land uses are found. Impacts of these upper watershed effects, sedimentation in particular, tend to concentrate in the mainstem and lower reaches of the watershed due to cumulative effects and lower stream gradient. One particularly complex salmonid habitat suitability issue—stream water temperature—needs additional analysis in light of the multifaceted interrelationships between stream water temperature and factors such as air temperature, streamside vegetation, channel width, groundwater influences, and basin size.

In general, there is a notable difference in stream habitat between the mainstem Redwood Creek its tributaries. The fundamental differences are related to the smaller size, higher gradient, and confined channel of the tributaries, particularly as compared to the low gradient, unconfined channel of the lower reach and most of the middle reach of mainstem Redwood Creek.

The sections below summarize specific conclusions and recommendations for the five Redwood Creek subbasins (estuary, Prairie Creek, lower Redwood, middle Redwood, and upper Redwood) that we delineated on the basis of geography, geology, climate, land use, and hydrology.